#4333
OK

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

May 30, 2013

TO: Internal File

THRU: James Owen, Lead JCO

FROM: Priscilla Burton, Soil Scientist PWB by SQS

RE: Pond 5A Temporary Access Road, Hiawatha Coal Company, Hiawatha Complex, C/007/0011, Task ID #4333

SUMMARY:

Revisions to the Hiawatha Mining and Reclamation Plan were received on May 14 2013. The revision outlines construction of a temporary access road from County Rd across the northwest corner of reclaimed slurry pond 5 into active sediment pond 5A for the purpose of loading and hauling coal fines for sale as a product. Pages 5-10 and p. 5-70A in App V-17 have been revised. The following plates have been revised to show the location of the access road: Ex V-9, V-9A, Ex VII-18A, and Ex 8-1A.

Slurry pond 5A was re-mined beginning in 2007 (pg 5-29, dated 2007). Slurry pond 5A is also used for run-off control (pg. 5-64) and will be the last structure to be reclaimed (pg. 5-78). Re-mining of the slurry pond is advantageous to the reclamation plan. Prior to approval, the following information is requested, in accordance with:

R645-301-244.200, The amount of mulch applied to the reclaimed site should be increased, based upon documented erosion of reclaimed sites using the 1 ton/acre mulch application. The Division recommends the application of 1.5 ton/acre hay mulch incorporated into the soil with surface roughening and 1500 pounds of wood fiber mulch applied a hydroseeder.

R645-301-521.165 and R645-301-521.270, The acreage of slurry pond 5 to be re-disturbed should be disclosed. Within this reclaimed slurry pond area, the cover soil should be removed and stockpiled. Locations of the topsoil stockpile should be shown on a map and marked with a sign.

R645-301-521.251, Disturbance Area markers should be placed along the reclaimed, slurry pond 5 to protect the phase 1 bond release area from construction activity.

TECHNICAL ANALYSIS:

OPERATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

Excluding roads, there are 221.36 disturbed acres are in the lower Hiawatha area (Sec. 241, p 37). Page 2-37 reports 106.5 acres have been reclaimed and Table II-13 itemizes the remaining reclamation work to be completed, including those areas not listed on page 2-37, such as Slurry Pond 5A Table III-3 lists approximately 112 acres within the lower Hiawatha area that will not be reclaimed as follows: roads 30.3 acres; railroad yard 15.2 acres; town 66.3 acres. The areas of reclamation in the vicinity of the preparation plant are illustrated on Exhibit II-4. Exhibit II-4A and pg. 2-37 provides the status of reclaimed and affected lands as of 2008 as follows:

26.37 acres of the 26.37 acre slurry pond 4/refuse pile 2 reclaimed;
5.51 acres of the 23.87 acre preparation plant reclaimed;
9.12 acres of Borrow Area F (all) reclaimed;
40.39 acres of the 40.39 acre Slurry pond 5 main cell reclaimed (15.51 acres remain active as a sediment basin as reported in Table II-13);
19.83 acres of the 29.11 "Affected" acres (in the preparation plant vicinity) reclaimed.

A total of 106.5 acres received Phase I bond release in January 2009 as detailed on page 2-37 of the MRP, Section 241. According to information on page 2-37, that leaves 39.23 acres to be reclaimed in the lower Hiawatha area. Exhibit II-4A provides a reference for the location of the reclaimed and remaining acres identified on page 2-37.

Earthwork (including seeding) at the Slurry pond 4/Refuse Pile 2, Slurry Pond 5 Main Cell, a portion of the Preparation Plant, and Borrow areas A and F was undertaken during the years 1996 – 2001 (according to Division records and the 2005 Annual Report).

Slurry pond 5 (main cell) was re-mined and the embankments were pushed inward to a grade of 5h:1v. (2-39). Refuse in Slurry pond 5 was sampled on September 25, 1996 by the Division and Dan Guy, Blawkhawk Engineering (consultant to US Fuel). The results of the refuse analysis are included in Appendix VII-18. As a result of these analyses, the Division

found the refuse to be non-toxic/nonacidic (Davidson, Field report and memo dated 11/5/1996). However, after having found these analytical reports in the MRP and seeing them first hand, I am of the opinion that these analytical results indicate that the refuse has the potential to become acid forming over time, based upon its pyritic sulfur content and the reported pyritic AcidBase Potential between 7.6 and –0.19 Tons/1000Tons.

Substitute topsoil from Borrow Area "A" was applied to the regraded surface to a depth of sixteen inches. Seeding of at Slurry Pond #5 (main cell) was completed in the fall 1999 (p. 2-37, 2-39 and Table 5-7) or in the Fall of 2000 (Appendix VIII-5). The work is described in Sections R645-301-241, -242, -243, -244 and R645-301-541 of the MRP. Depth of topsoil application and seeding treatments are shown on Ex. II-4. Seed mix No 1 (Table III-5) was used on the borrow areas and seed mix #2 (Table III-6) was used on the slurry impoundments and refuse areas.

Site visits on April 18 and 23, 2008 (Insp. Rpt. #1621 and its attachment) documented surface roughening and the 16 inch topsoil cover depth on slurry ponds and refuse piles (shown on Ex II-4). In addition, I noted accumulations of salt on the eastern level surface of slurry pond #5 and marked the location on the PFO copy of Exhibit V-13. These salt accumulations are areas of limited vegetation growth and excessive erosion. Sediment from this area drains into slurry pond 5A.

The northern portion of slurry pond 5, which is referred to as pond 5A was authorized in 2001 to receive coal mine waste from the Bear Canyon Mine (pp. 5-104 and 5-106 of Sec. 541).

Slurry pond 5A was re-mined beginning in 2007 (pg 5-29, dated 2007). Slurry pond 5A is also used for run-off control (pg. 5-64) and will be the last structure to be reclaimed (pg. 5-78). The proposed reclamation of Slurry Pond 5A is described on page 2-39 through 2-42. Sampling commitments for acid/toxic forming materials are included in this description.

Details of road construction and reclamation have been requested under the engineering review.

Findings:

Remining of the slurry pond is advantageous to the reclamation plan. Prior to approval, the following information is requested, in accordance with:

R645-301-521.165 and R645-301-521.270, The acreage of slurry pond 5 to be re-disturbed should be disclosed. Within this reclaimed slurry pond area, the cover soil should be removed and stockpiled. Locations of the topsoil stockpile should be shown on a map and marked with a sign.

R645-301-521.251, Disturbance Area markers should be placed along the reclaimed, slurry pond 5 to protect the phase 1 bond release area from construction activity.

R645-301-527.200 and R645-301-534.300, Please provide a detailed description, map and cross section of the primary road to be constructed for the purpose of transporting product.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Coal Mine Waste and Refuse Piles

The reclamation topography is shown on Exhibit V-13 (dated 1998), and associated cross-sections for Slurry Pond 4 and borrow area F on V-13C and for Slurry pond 5 on V-13D. Neither Exhibit V-13 (dated 1999), nor exhibits provided with the 2009 bond release application clearly indicate existing contours of Slurry Pond 5A. Slurry Pond 5A contours will change with remining, therefore as-built contours of slurry pond 5A have been requested under the engineering review.

Slurry ponds/refuse cut and fill balance is stated on p.2-39 and in App. VIII-1, Tables 1-4. Remaining cut/fill work is estimated at 120,444 yd^3 cut, with approximately the equivalent 125,259 yd^3 fill for Slurry Pond 5A (see Table 1, App V-15) and 94,259 yd^3 cut (to be spread out as topsoil over preparation plant area) with 9,326 yd^3 fill at the upper railroad yard (see Table 4, App. V-15).

Lifts of two feet and compaction to 90% maximum dry density are described in Section 541 (pg. 5-90). The MRP describes sixteen inches of soil cover over the mine waste based on the characteristics of the coal mine waste and on test plots (Sec. 231.200, p. 2-12 through 2-21 and App. III-5). Four feet of cover is required by R645-301-553.252 over any acid/toxic forming waste.

Findings:

Slurry Pond 5A contours will change with remining, therefore as-built contours of slurry pond 5A and reclamation contours have been requested under the engineering review.

STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR Sec. 817.95; R645-301-244.

Analysis:

Surface roughness for the slurry ponds were achieved by either a ripper or backhoe (Section 541, pg. 5-104). The borrow areas were to be ripped, disked, and raked prior to seeding and mulching (Sec. 541, pg. 5-109). Reclamation treatments are shown on Ex. II-5 and discussed in Sec. 341.230. The MRP states that mulch type and application may vary, but that the regraded borrow site and access road and the slurry ponds were to be treated with 1 ton/acre mulch.

The amount of mulch applied to the reclaimed site should be increased, based upon documented erosion of reclaimed sites using the 1 ton/acre mulch application. (Site visits on April 18 and 23, 2008 and on October 7, 2008 documented an erosion problem on the north side of Slurry Pond #4 (See Inspection Rpt. # 1621 and Inspection Rpt. #1793). The Division recommends the application of 1 ton/acre mulch incorporated into the soil with surface roughening and 1500 pounds of wood fiber mulch applied a hydroseeder.

Findings:

R645-301-244.200, The amount of mulch applied to the reclaimed site should be increased, based upon documented erosion of reclaimed sites using the 1 ton/acre mulch application. The Division recommends the application of 1.5 ton/acre hay mulch incorporated into the soil with surface roughening and 1500 pounds of wood fiber mulch applied a hydroseeder.

RECOMMENDATIONS:

The amendment is not recommended for approval at this time.

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